

WHAT IS CLAIMED IS:

1. A rotary clutch device, comprising:

a tooth-partially-lacking gear that can mesh with a drive gear and is given initial rotation force;

5 a rotatable cam body that is concentric with the tooth-partially-lacking gear, having an engagement step; and an elastic body;

wherein an engagement lever is engaged with and disengaged from the engagement step according to an intermittent operation of an actuator so that the tooth-partially-lacking gear starts and stops to rotate; and

rotation force of the tooth-partially-lacking gear is transmitted to the cam body via the elastic body.

15 2. The rotary clutch device according to claim 1, wherein the cam body includes a first support portion; the tooth-partially-lacking gear includes a second support portion;

the first support portion and the second support portion are provided on confronting side surfaces of the cam body and the tooth-partially-lacking gear, respectively, so as to be opposed to each other in a rotation direction; and

both ends of the elastic body are supported by the first support portion and the second support portion.

25

3. The rotary clutch device according to claim 1,
wherein the cam body includes a first contact portion;
the tooth-partially-lacking gear includes a second
contact portion;

5 the first contact portion and the second contact portion
are provided on confronting side surfaces of the cam body and
the tooth-partially-lacking gear, respectively, so as to be
opposed to each other in a rotation direction; and

a flat elastic body is fixed to at least one of the first
10 contact portion and the second contact portion.

4. The rotary clutch device according to claim 3,
wherein the first and second contact portions are formed
so as to be long in a radial direction of the cam body and the
15 tooth-partially-lacking gear; and

the elastic body is provided on at least one of
confronting faces of the first and second contact portions.

5. A sheet feeder, comprising:

20 a sheet stacking unit in which sheets are stacked;
a sheet feed roller that sends out a sheet supplied from
the sheet stacking unit; and

a rotary clutch device;

wherein the sheet feed roller is driven by a drive gear
25 via the rotary clutch device;

the rotary clutch device includes: a tooth-partially-lacking gear that can mesh with the drive gear and is given initial rotation force, a rotatable cam body that is concentric with the tooth-partially-lacking gear, having an engagement step, an engagement lever and an elastic body;

the engagement lever is engaged with and disengaged from the engagement step according to an intermittent operation of an actuator so that the tooth-partially-lacking gear starts and stops to rotate; and

rotation force of the tooth-partially-lacking gear is transmitted to the cam body via the elastic body.

6. An image forming apparatus, comprising:

a sheet stacking unit in which sheets are stacked;
a sheet feed roller that sends out a sheet supplied from the sheet stacking unit;

an image forming unit that forms an image on a sheet that is sent by the sheet feed roller; and

a rotary clutch device;

wherein the sheet feed roller is driven by a drive gear via the rotary clutch device;

the rotary clutch device includes: a tooth-partially-lacking gear that can mesh with the drive gear and is given initial rotation force, a rotatable cam body that is concentric with the tooth-partially-lacking gear, having an

engagement step, an engagement lever and an elastic body;

the engagement lever is engaged with and disengaged from the engagement step according to an intermittent operation of an actuator so that the tooth-partially-lacking gear starts and stops to rotate; and

rotation force of the tooth-partially-lacking gear is transmitted to the cam body via the elastic body.

7. A rotary clutch device, comprising:

a first rotating body with which a rotating force is supplied by a driving source;

a second rotating body disposed concentrically with the first rotating body, the second rotating body with which the rotating force is supplied by the first rotating body;

an engagement portion being engageable with the second rotating body to restrict rotation thereof; and

an elastic body disposed between the first rotating body and the second rotating body to transmit the rotating force from the first rotating body to the second rotating body;

wherein the elastic body is compressed when the engagement portion restricts the rotation of the second rotating body.

8. A rotary clutch device, comprising:

a first rotating body disposed rotatably around a rotating axis, the first rotating body having a first opposing surface

being perpendicular to the rotating axis;

a second rotating body disposed concentrically with the first rotating body, the second rotating body having a second opposing surface opposed to the first opposing surface and being
5 perpendicular to the rotating axis;

an restriction portion capable of restricting rotation of the second rotating body in a predetermined direction; and
an elastic body;

wherein the first rotating surface includes a first support
10 portion projecting towards the second rotating body;

the second rotating surface includes a second support portion projecting towards the first rotating body and being positioned in the predetermined direction from the first support portion; and

15 the elastic body is arranged between the first support portion and the second support portion.

9. A rotary clutch device, comprising:

a first rotating body with which a rotating force is
20 supplied from a driving source;

a second rotating body with which the rotating force is supplied by the first rotating body;

an engagement portion being engageable with the second rotating body to restrict rotation thereof periodically; and

25 an impact absorber disposed between the first rotating

body and the second rotating body to absorb an impact that occurs when the engagement portion is engaged with the second rotating body.